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A new species of *Junghuhnia* (*Basidiomycota, Meruliaceae*) from tropical China

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Abstract — A new polypore, *Junghuhnia minor* sp. nov., is described and illustrated from the tropical forest of Yunnan Province, southwestern China. The new species is characterized by very thin annual resupinate basidiocarps, a cream to pale buff pore surface with small and slightly lacerated pores, small (2.7–3 × 1.9–2.2 µm) ellipsoid basidiospores, and skeletocystidia.

Key words — lignicolous fungi, *Meruliaceae*, taxonomy

Introduction

Lignicolous fungi are important components of forest ecosystems, where they decompose forest litter and maintain energy flow and material circulation (Lonsdale et al. 2008). Many, including some traditionally used for medicinal purposes in Asia, are edible while others are plant pathogens (Dai et al. 2007, 2009b). New species have been described after recent investigations on lignicolous fungi in subtropical and tropical forests in China (Cui & Dai 2008, Cui et al. 2008, 2011, Dai et al. 2009a, 2010, Dai & Li 2010, Du & Cui 2009, Li & Cui 2010, Li et al. 2008, Wei & Dai 2008, Xiong & Dai 2008, Zhou & Dai 2008).

Characters noted for two polypores collected on fallen angiosperm twig during a survey of the lignicolous fungi in southern China (dimitic hyphal system, encrusted skeletocystidia, small ellipsoid basidiospores) suggest an affinity with *Junghuhnia* Corda. They differ morphologically from existing *Junghuhnia* species, and so I describe and illustrate them as a new species.

Materials & methods

The specimens are deposited at the biological herbarium of Institute of Applied Ecology, Chinese Academy of Sciences (IFP). The microscopic procedure follows Dai

(2010). The microscopic studies were made from sections mounted in Cotton Blue (CB): 0.1 mg aniline blue dissolved in 60 g pure lactic acid; CB+ = cyanophily, CB– = acyanophily. Amyloid and dextrinoid reactions were tested in Melzer's reagent (IKI): 1.5 g KI (potassium iodide), 0.5 g I (crystalline iodine), 22 g chloral hydrate, aq. dest. 20 ml; IKI– = neither amyloid nor dextrinoid reaction. 5% KOH was used as reagent. Sections were studied at magnifications up to ×1000 using a Nikon Eclipse E600 microscope and phase contrast illumination, and dimensions were estimated subjectively with an accuracy of 0.1 μm. In the spore measurements, the apiculus was excluded. In presenting the variation of spore size, 5% of the measurements out of each end of the range are given in parentheses. The following abbreviations are used in the text: L = mean spore length (arithmetical mean of all spores), W = mean spore width (arithmetical mean of all spores), Q = extreme values of the length/width ratios among the studied specimens, and n = the number of spores measured from a given number of specimens. Special color terms are from Anonymous (1969) and Petersen (1996).

Taxonomy

Junghuhnia minor H.S. Yuan, **sp. nov.** Fig. 1

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Carpophorum annuum, resupinatum. Facies pororum cremeum vel bubalinum; pori angulati, 5–6 per mm. Systema hypharum dimiticum, hyphae generatoriae fibulatae, hyphae skeletales subiculi 2–4 μm diam. Sporae hyalinae, ellipsoideae, 2.7–3 × 1.9–2.2 μm.

Type. — China. Yunnan Province, Mengla County, Wangtianshu Forest Park, on fallen angiosperm twig, 16.IX.2007 Yuan 3268 (**holotype** in IFP).

Etymology — *minor* (Lat.): refers to small basidiospores.

Fruitbody — Basidiocarps annual, resupinate, coriaceous, without special odor or taste when fresh, corky when dry, up to 15 cm long, 1 cm wide and 1 mm thick; sterile margin thinning out, membranous, cream, up to 3 mm wide. Pore surface cream to pale buff-yellow upon drying; pores angular, 5–6 per mm, dissepiments thin, slightly lacerate. Subiculum very thin to almost lacking, cream to pale buff, ca. 0.1 mm thick. Tubes concolorous with pore surface, corky, ca. 0.4 mm long.

Hyphal structure — Hyphal system dimitic; generative hyphae bearing clamp connections, skeletal hyphae IKI–, CB+; tissue unchanged in KOH.

Subiculum — Dominated by skeletal hyphae; generative hyphae hyaline, thin-walled, occasionally branched, 1.8–3.5 μm diam; skeletal hyphae hyaline, thick-walled with a distinct lumen to subsolid, straight to flexuous, occasionally branched, interwoven, 2–4 μm diam.

Tubes — Generative hyphae infrequent, hyaline, thin-walled, occasionally branched, 1.5–2.5 μm diam; skeletal hyphae dominant, hyaline, thick-walled with a distinct lumen to subsolid, occasionally branched, interwoven, 1.8–2.8

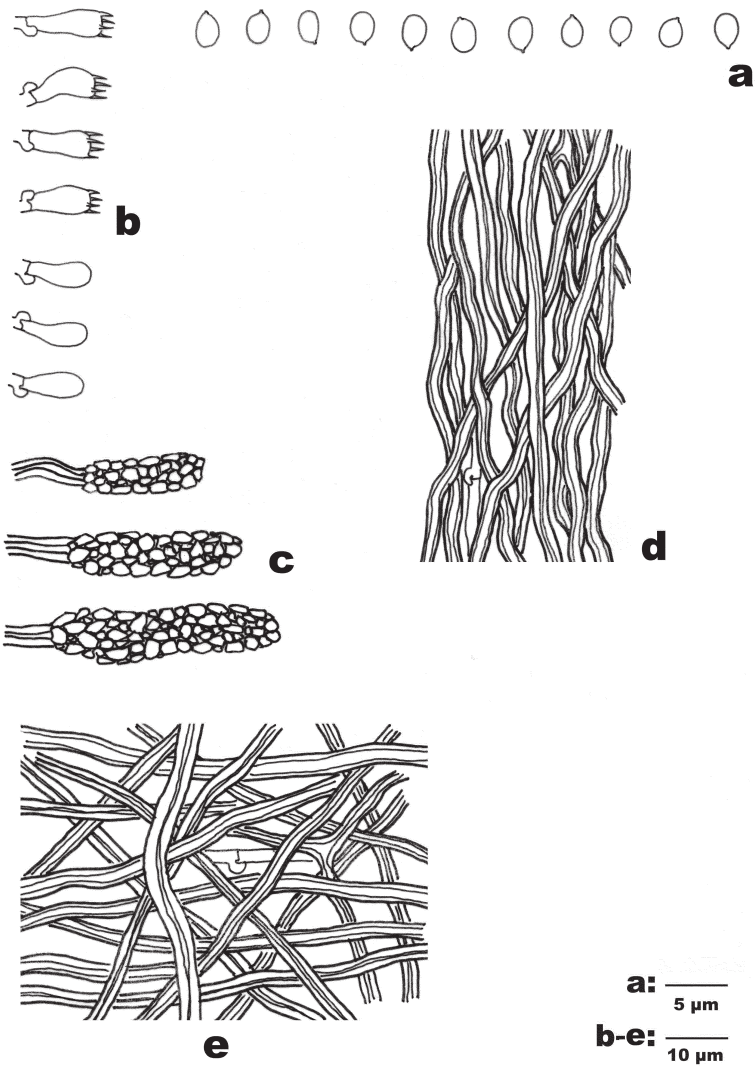

Fig. 1. Microscopic structures of *Junghuhnia minor* (drawn from the holotype).
a: Basidiospores. b: Basidia and basidioles. c: Skeletocystidia.
d: Hyphae from trama. e: Hyphae from subiculum.

μm diam. Skeletocystidia numerous, clavate, thick-walled, originated from trama, embedded or projecting, heavily encrusted, 15–50 × 6–11 μm (with encrustation); basidia clavate, bearing four sterigmata and a clamp connection at the base, 9–12 × 4–5 μm; basidioles in shape similar to basidia, but slightly smaller.

Spores — Basidiospores small, ellipsoid, hyaline, thin-walled, smooth, IKI–, CB–, (2.5–)2.7–3 × (1.8–)1.9–2.2(–2.3) μm, L = 2.85 μm, W = 2.04 μm, Q = 1.38–1.41 (n=60/2).

Additional specimen examined — **China**. **Yunnan Province**, Mengla County, Wangtianshu Forest Park, on fallen angiosperm twig, 16.IX.2007 Yuan 3215 (IFP).

Type of rot — White rot.

Remarks — *Junghuhnia minor* is characterized by annual, resupinate and very thin basidiocarps, pale buff-yellow pore surface with white to cream margin, small ellipsoid basidiospores (2.7–3 × 1.9–2.2 μm), and skeletocystidia.

Junghuhnia luteoalba (P. Karst.) Ryvarden also is characterized by resupinate, pale-buff colored basidiocarps and slightly lacerate dissepiments, but differs in its cylindrical basidiospores and larger pores (4–8 per mm) (Núñez & Ryvarden 2001). In addition, *J. luteoalba* is distributed in boreal and temperate zones.

Junghuhnia crustacea (Jungh.) Ryvarden resembles the new species in its resupinate, thin basidiocarps and cream to pale-buff pore surface but has more shallow pores, distinctly lacerate pores and larger basidiospores (Núñez & Ryvarden 2001, Ryvarden & Johansen 1980).

Junghuhnia minuta I. Lindblad & Ryvarden, which has similar basidiospores (2.5–3 × 2–2.5 μm), differs from *J. minor* by having distinctly pileate basidiocarps and tiny pores (10–12 per mm, Lindblad & Ryvarden 1999).

Junghuhnia microspora Rajchenb. also has small basidiospores but is distinguished from *J. minor* by its orange to chestnut colored pore surface and narrower basidiospores (2.6–3.6 × 1.0–1.6 μm, Rajchenberg 1983).

Other specimens examined: ***Junghuhnia crustacea*** — **China**. **Yunnan Province**, Mengla County, Wangtianshu Forest Park, on fallen angiosperm branch, 17.IX.2007 Yuan 3638 (IFP); **Kenya**. **Western Province**, Kakamega district, Kakamega Forest, substrate unknown, 20.I.1970 Ryvarden 5431 (O); **Thailand**. **Cangwat Chiang Mai**, Amphoe Mae Rim, Kong Hae, on fallen angiosperm trunk, 15.II.1979 Ryvarden 17568 (O).

J. microspora — **Argentina**. **Missiones**, Iguazu Falls, Apepu Reservation, substrate unknown, 4.III.1982 Rajchenberg 3504 (O).

J. minuta — **Puerto Rico**. **Luquillo**, Beasley water shed, on deciduous tree, 6.VI.1997 Ryvarden 40279 (O).

J. luteoalba — **China**. **Heilongjiang Province**, Ning'an County, Volcano forest, on fallen trunk of *Populus*, 14.IX.2004 Yuan 618 (IFP); **Liaoning Province**, Kuandian County, Baishilazi Nat. Res., on rotten wood of *Quercus,* 1.VIII.2004 Cui 1090 (IFP).

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